

I Claim:

1. A self-adjusting exercise apparatus that applies a predetermined work load to a user comprising:

- (a) a frame with a seat, with pedals, and with moveable handles;
- (b) a resistance apparatus that moves in response to motion of said pedals and of said handles;
- (c) means for applying a resistance to said resistance apparatus;
- (d) means for adjusting said means for applying a resistance;
- (e) means for controlling said means for adjusting;

whereby a constant work load may be applied through said exercise equipment regardless of the speed at which said user moves said pedals and/or said handles.

2. A self-adjusting exercise apparatus that applies a predetermined work load to a user of Claim 1 wherein said means for applying a resistance is an electromagnet and said resistance apparatus is constructed of a material responsive to magnetic force.

3. A self-adjusting exercise apparatus that applies a predetermined work load to a user of Claim 2 wherein said means for adjusting comprises an adjustable electrical current applied to said electromagnet.

4. A self-adjusting exercise apparatus that applies a predetermined work load to a user of Claim 3 wherein said means for controlling comprises, at least in part, a central control unit which

can control said adjustable electrical current so that a predetermined resistance may be applied by said adjustable electrical current to said resistance apparatus.

5. A self-adjusting exercise apparatus that applies a predetermined work load to a user of Claim 4 wherein said pedals and said moveable handles are connected to a rotatable disk that responds with circular motion to linear motion applied to said pedals and said handles, said disk comprising said resistance apparatus.

6. A self-adjusting exercise apparatus that applies a predetermined work load to a user of Claim 5 wherein said central control unit further comprises means for sensing the speed of the movement of said disk and further comprises means for responding to said speed of movement whereby said adjustable electrical current may be adjusted to apply a predetermined work load to a user regardless of how fast said user moves said pedals and said handles.

7. A physiological stress testing method comprising:
- (a) calculating a metabolic equivalent for an individual;
 - (b) from said calculated metabolic equivalent estimating a volume of oxygen value;
 - (c) establishing a test protocol based on said volume of oxygen value wherein said test protocol establishes a predetermined work load that increases at predetermined intervals, said predetermined work load is higher when the volume of oxygen values are higher;
 - (d) placing a patient on an exercise apparatus that applies said predetermined work load regardless of how fast said exercise apparatus is operated;
 - (e) measuring physiological parameters of said patient during said protocol and

stopping said protocol when said patient has reached a predetermined level for physiological parameters.

8. A physiological stress testing method of Claim 7 wherein said step of providing an exercise apparatus further includes said exercise apparatus operating so that said patient's joints are not required to bear said patient's weight while carrying out said test protocol.

9. A physiological stress testing method of Claim 8 wherein said step of providing exercise equipment further provides allowing said patient a choice of using different major muscle groups of said patient on said exercise equipment in carrying out said protocol.

10. A physiological stress testing method of Claim 9 wherein said step of providing exercise equipment further includes using a controllable electromagnetic resistance for said exercise apparatus to apply said step of applying a predetermined work load for said patient.

11. A physiological stress testing method of Claim 10 wherein said step of allowing said patient a choice of using different major muscle groups involves allowing at least a choice of using the legs in a pedaling-like motion and/or the arms to move handles in a back-and-forth motion on said exercise equipment in carrying out said protocol.

12. A physiological stress testing method of Claim 11 wherein said step of applying a predetermined work load further comprises sensing how fast a patient is operating said exercise apparatus and adjusting said controllable electronic resistance whereby said patient is required to exert said predetermined work load regardless of how fast said patient is operating said exercise

apparatus.

13. An exercise method to allow an individualized exercise routine for a person exercising comprising:
- (a) providing a stationery exercise bicycle that provides resistance for arm movement by handles and leg movement by pedals;
 - (b) connecting said arm handles and said pedals to a moveable disk which moves in response to motion of said arm handles and of said pedals;
 - (c) applying an adjustable electromagnetic resistance to said disk;
 - (d) controlling said electromagnetic resistance by sensing the speed of the movement of said disk and adjusting said electromagnetic resistance in response to said speed of movement of said disk whereby a constant work load is applied to a user regardless of how fast the disk rotates;

whereby a user may exercise at a user's own pace but nevertheless achieve a constant work load in a preset period of time better enabling a user to achieve a preset level of exertion.

14. An exercise method to allow an individualized exercise routine for a person exercising of Claim 13 wherein said controlling electromagnetic resistance further includes the step of displaying the work load required of the user for a predetermined level of electromagnetic resistance.

15. An exercise method to allow an individualized exercise routine for a person exercising of Claim 14 further comprising said step of allowing said user to control said electromagnetic resistance so a user may determine what work load is applied to a user while moving said arm handles and said pedals in an exercise routine.

16. An exercise method to allow an individualized exercise routine for a person exercising of Claim 15 that further comprises said step of providing adjustable seating whereby a user may adjust said seating whereby said arm handles and said pedals are in the most comfortable position for a user of said stationery exercise bicycle.